IN THE CLAIMS

Pending claims 1-12 are listed below.

1. (Original) In an optical fiber communications system including an optical fiber, a method for compensating for dispersion effects in the optical fiber, the method comprising:

receiving at least two low-speed channels, each low-speed channel allocated a different frequency band of an optical fiber communications system for transmission across the communications system;

for each low-speed channel, estimating attenuation caused by dispersion resulting from transmission of the low-speed channel across the optical fiber in the frequency band allocated to the low-speed channel;

adjusting a power of each low-speed channel to compensate for the estimated attenuation caused by dispersion; and

frequency division multiplexing the power-adjusted low-speed channels to produce an electrical high-speed channel for transmission across the communications system.

2. (Original) The method of claim 1 wherein the step of adjusting a power of each low-speed channel comprises applying a gain to each low-speed channel which is equal in magnitude to the estimated attenuation for that low-speed channel.

3. (Original) The method of claim 2 wherein the step of adjusting a power of each low-speed channel comprises applying a constant gain to each low-speed channel which is equal in magnitude to the estimated attenuation at a center frequency of the frequency band allocated to the low-speed channel.

4. (Original) The method of claim 1 wherein the step of adjusting a power of each low-speed channel comprises applying a gain ramp to the low-speed channels.

5. (Original) The method of claim 1 wherein the step of estimating an attenuation caused by dispersion comprises estimating an attenuation caused by chromatic dispersion.

6. (Original) The method of claim I wherein the step of estimating an attenuation caused by dispersion comprises estimating an attenuation caused by polarization mode dispersion.

7. (Original) An optical fiber communications system for transmitting at least two low speed channels across the communications system, the communications system comprising:

a variable gain block for adjusting a power of each low-speed channel to compensate for an estimated attenuation caused by dispersion resulting from transmission of the low-speed channel across an optical fiber in a frequency band allocated to the low-speed channel; and

a FDM multiplexer coupled to the variable gain block for combining the power-adjusted low-speed channels into an electrical high-speed channel suitable for transmission across the communications system.

8. (Original) The communications system of claim 7 wherein the variable gain block applies a gain to each low-speed channel which is equal in magnitude to the estimated attenuation for that low-speed channel.

9. (Original) The communications system of claim 8 wherein the variable gain block applies a constant gain to each low-speed channel which is equal in magnitude to the estimated attenuation at a center frequency of the frequency band allocated to the low-speed channel.

10. (Original) The communications system of claim 7 wherein the variable gain block applies a gain ramp to the low-speed channels.

11. (Original) The communications system of claim 7 wherein the variable gain block is for adjusting a power of each low-speed channel to compensate for an estimated attenuation caused by chromatic dispersion.

12. (Original) The communications system of claim 7 wherein the variable gain block is for adjusting a power of each low-speed channel to compensate for an estimated attenuation caused by polarization mode dispersion.